



Rigging Manual

convert 15A series



El colgado del equipo sólo debe realizarse utilizando los herrajes de colgado recomendados y por personal cualificado. No cuelgue la caja de las asas.

The appliance should be flown only from the rigging points and by qualified personnel. Do not suspend the box from the handles.

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Warning

This manual contains needed information for flying D.A.S. Audio line array systems, description of the elements and safety precautions. To perform any operations related to flying the system, read the present document first, and act on the warnings and advice given. The goal is to allow the user to become familiar with the mechanical elements required to fly the acoustic system, as well as the safety measures to be taken during set-up and teardown.

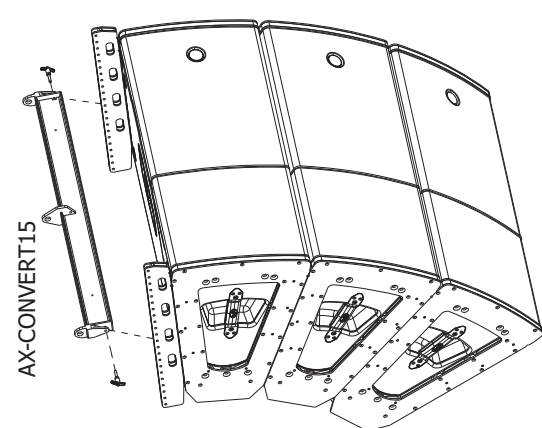
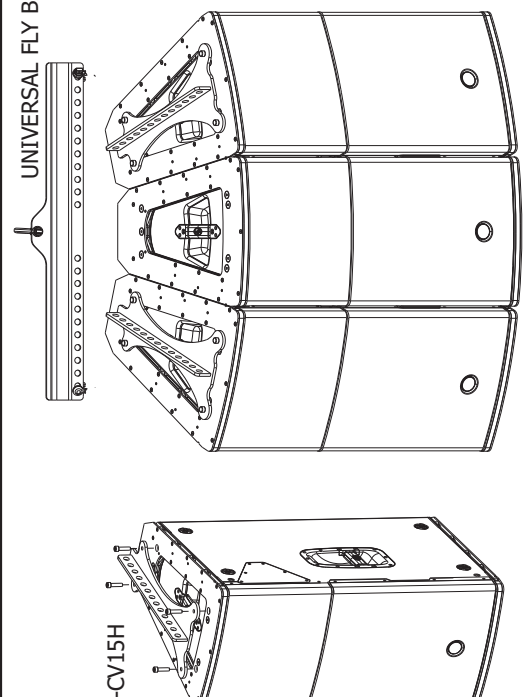
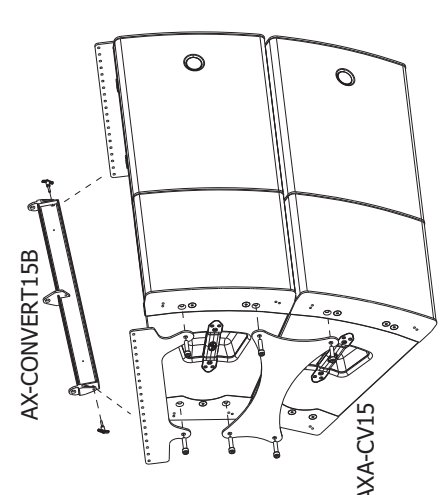
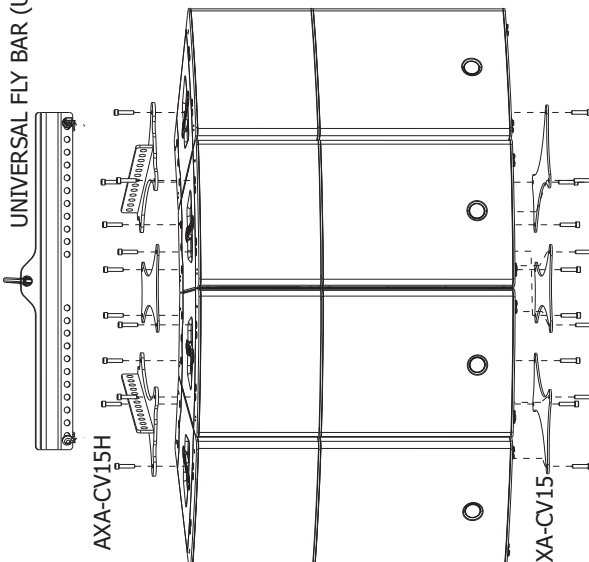
Only experience installers with adequate knowledge of the equipment and local safety regulations should fly speaker boxes. It is the user's responsibility to ensure that the systems to be flown (including flying accessories) comply with state and local regulations.

The working load limits in this manual are the results of tests by independent laboratories. It is the user's responsibility to stay within safe limits. It is the user's responsibility to follow and comply with safety factors, resistance values, periodical supervisions and warnings given in this manual. Product improvement by means of research and development is on going at D.A.S. Specifications are subject to change without notice.

To this date, there is no international standard regarding the flying of acoustic systems. However, it is common practice to apply 5:1 safety factors for enclosures and static elements. For slings and elements exposed to material fatigue due to friction and load variation the following ratios must be met; 5:1 for steel cable slings, 4:1 for steel chain slings and 7:1 for polyester slings. Thus, an element with a breaking load limit of 1000 kg may be statically loaded with 200 kg (5:1 safety factor) and dynamically loaded with 142 kg (7:1 safety factor).

When a system is flying, the working load must be lower than the resistance of each individual flying point in the enclosure, as well as each box. Hanging hardware should be regularly inspected and suspect units replaced if in doubt. This is important to avoid injury and absolutely no risks should be taken in this respect. It is highly recommended that you implement an inspection and maintenance program on flying elements, including reports to be filled out by the personnel that will carry out the inspections. Local regulations may exist that, in case of accident, may require you to prevent evidence of inspection reports and corrective actions after defects were found.

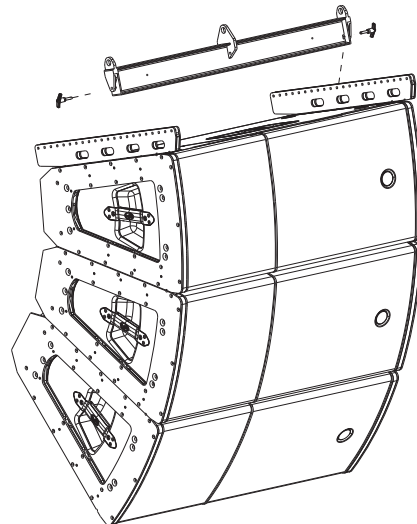
Absolutely no risks should be taken with regards to public safety. When flying enclosures from ceiling support structures, extreme care should be taken to assure the load bearing capabilities of the structures so that the installation is absolutely safe. Do not fly enclosures from unsafe structures. Consult a certified professional if needed. All flying accessories that are not supplied by D.A.S. Audio are the user's responsibility. Use at your own risk.

VERTICAL ARRAY  AX-CONVERT15 AXA-CV15H	CONVERT 1560RA CONVERT 1590RA
HORIZONTAL ARRAY  UNIVERSAL FLY BAR (UFB) AXA-CV15H	CONVERT 1560A CONVERT 1590A
VERTICAL ARRAY  AX-CONVERT15B AXA-CV15	CONVERT 1560A CONVERT 1590A
HORIZONTAL ARRAY  UNIVERSAL FLY BAR (UFB) AXA-CV15H AXA-CV15	

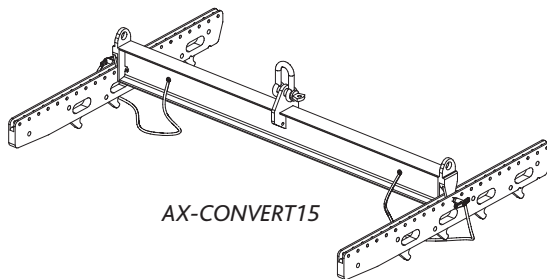
VERTICAL ARRAY ('-RA' versions)

For this mounting type *convert1560RA* or *convert1590RA* are required. This is the simplest way because only *AX-CONVERT15* rigging accessory is required for just one lift motor. In case of using two lift motors, *AX-CONVERT15* and *PICK-UPAX-CONVERT15* will be needed.

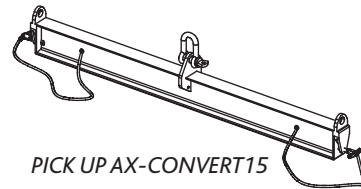
Be conscious that rigging must be performed by highly skilled workers, with an adequate knowledge of the equipment and fittings to use. Workers must also know the local safety regulations. User is responsible to ensure that sound rigging systems (including rigging accessories) meet state and local regulations in force.



Mounting type



AX-CONVERT15



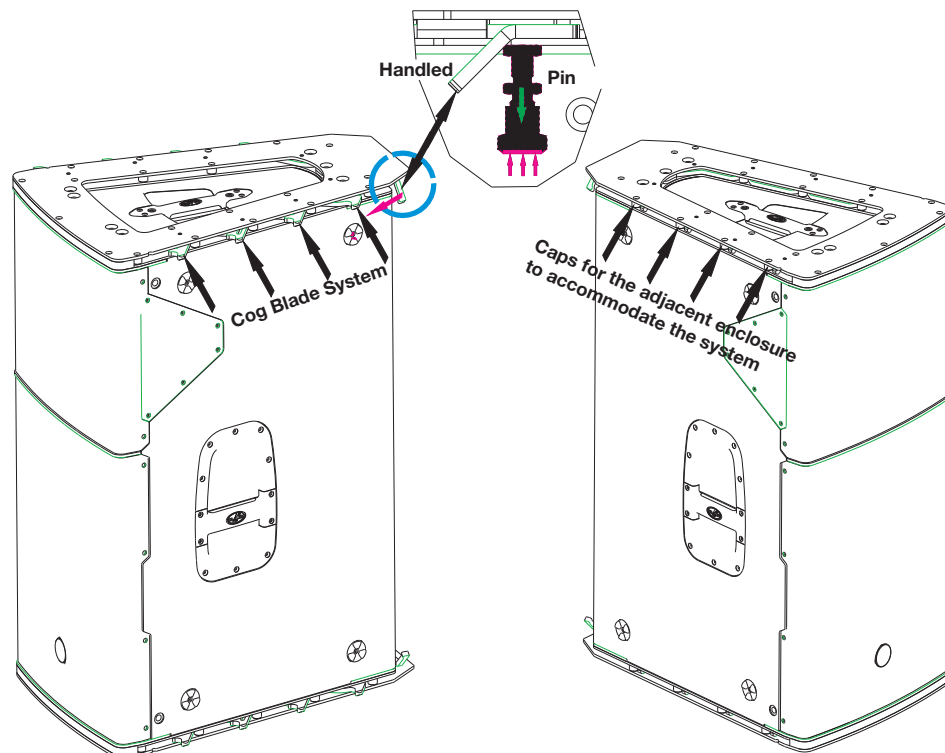
PICK UP AX-CONVERT15

Accessories required for this mounting type
(WLL =300 kg)

Firstly, let's see how a rigging system, which is built into the enclosure, works.

At the rear you will find a safety pin which is not removable.

If we push the red button and pull it down, a cog blade system is exposed. This piece will slide out if we push a handle near the pin (see figure).



Junction between enclosures

Suppose we join several enclosures to create a vertical array mounting type for '**-RA**' versions.

We will place the first two enclosures, as in **Figure1**, one above the other on a flat surface.

The rigging system ends are aligned and prevent them from moving while acting on the locking pins.

To join the two enclosures with the rigging system we will act on the rear pin (shown in red in **Figure 2**) and also on the lever adjacent to it.

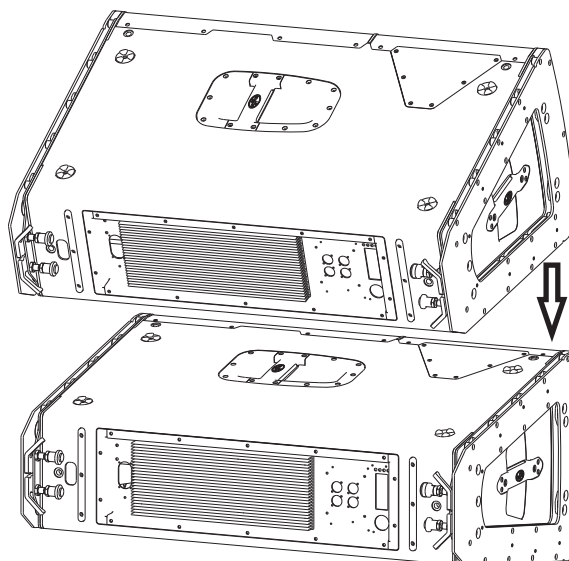


Figure 1

Refer to **Figure 3**.

On the previous page we described the elements of this *convert 15A* version.

Push the red button and pull it down to free the cog blade system.

This piece will slide out if we push the lever near the pin and act simultaneously on the pin, as we said before.

Release the safety pin button and ensure that it recovers its initial position to end the process (by an internal spring as shown in **Figure 4**).

Repeat this process with the other pins marked in blue in **Figure 2** and the two enclosures will join together safely.

To join one more enclosure, take the group of two enclosures fixed before and follow the instructions described (**Figure 5** and **Figure 6**).

Due to the coverage angles, more than three enclosures won't be necessary.

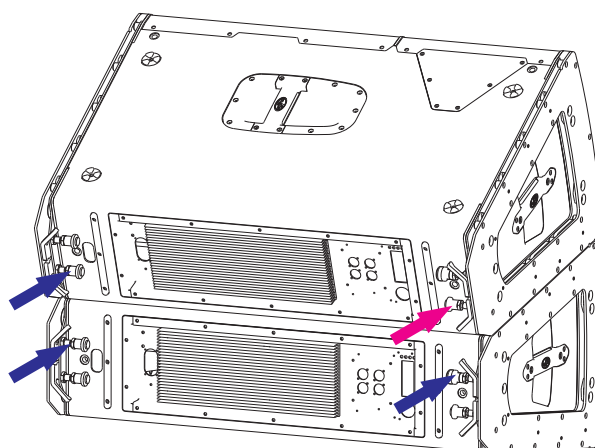


Figure 2

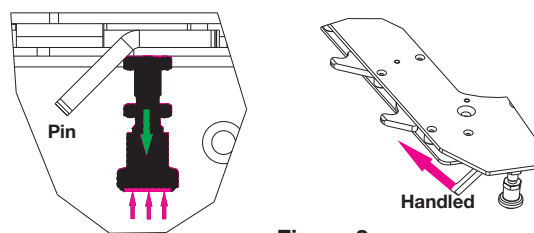


Figure 3

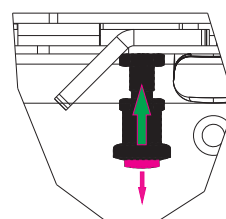


Figure 4

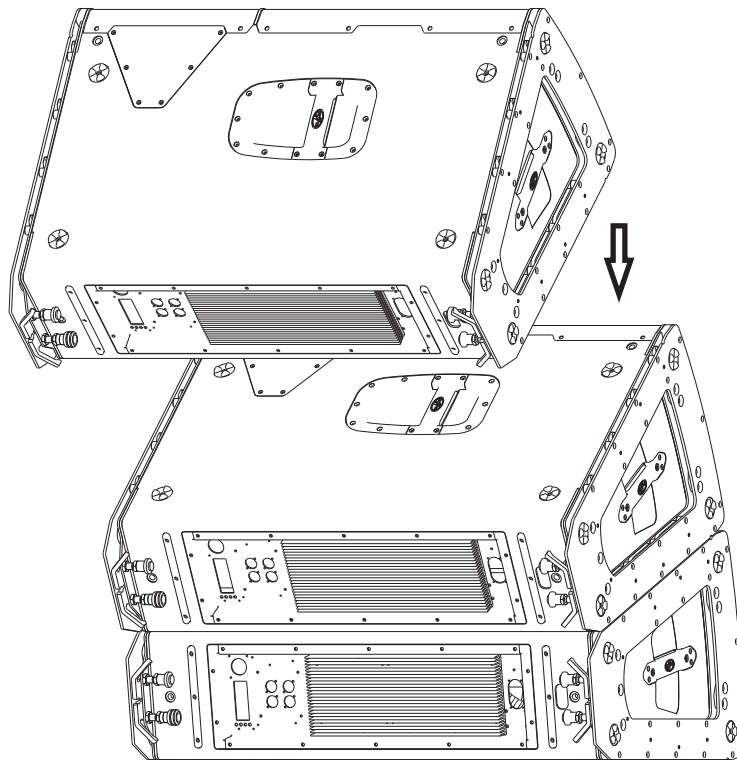


Figure 5

Remember to repeat the junction process acting on the pins marked in **Figure 6**. The enclosures will remain together securely.

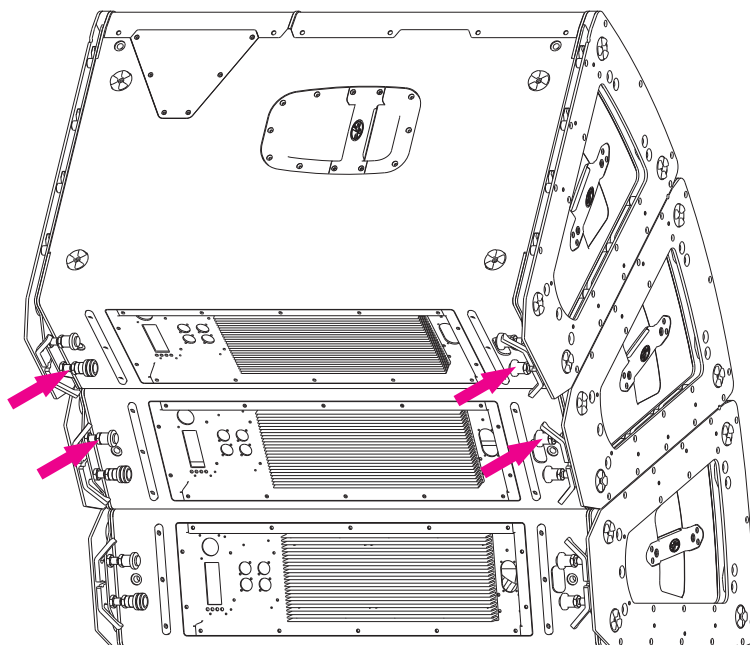
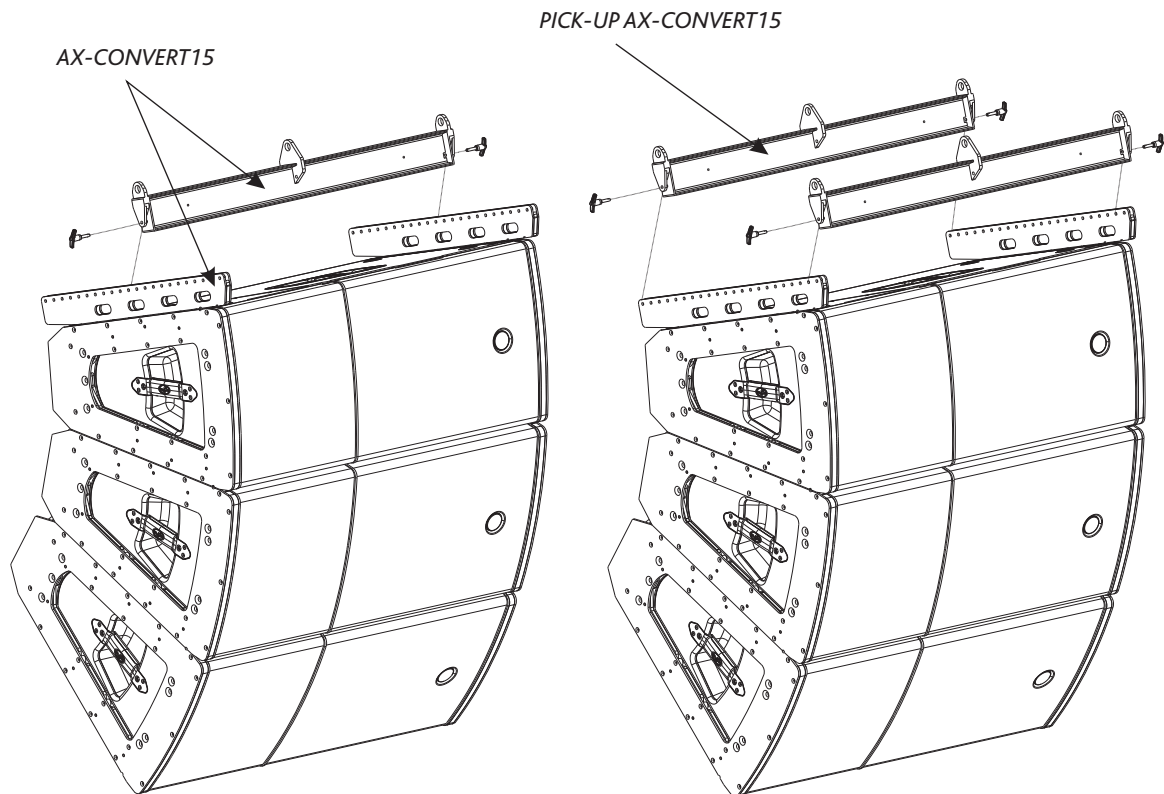
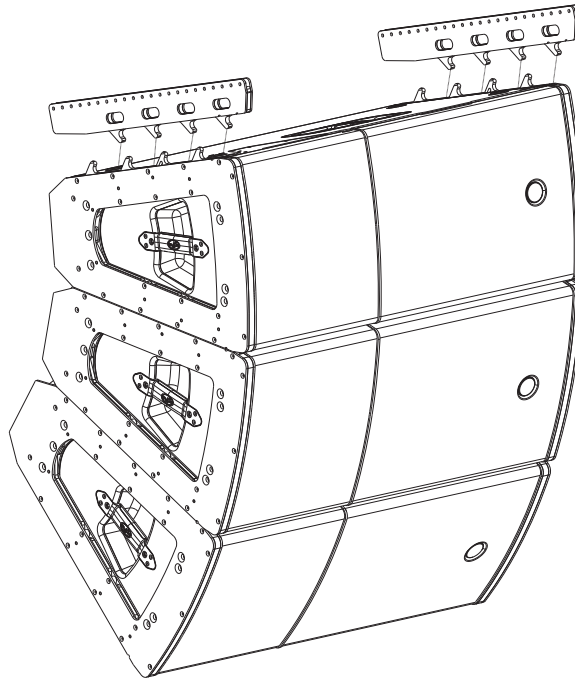


Figure 6

Finally, join **AX-CONVERT15** with the top enclosure.

First, unite each of the side parts of the AX facing the cog blade system of the side piece with the top enclosure caps. Act on the safety pin of this side of the enclosure as we explained before (see the figures below).

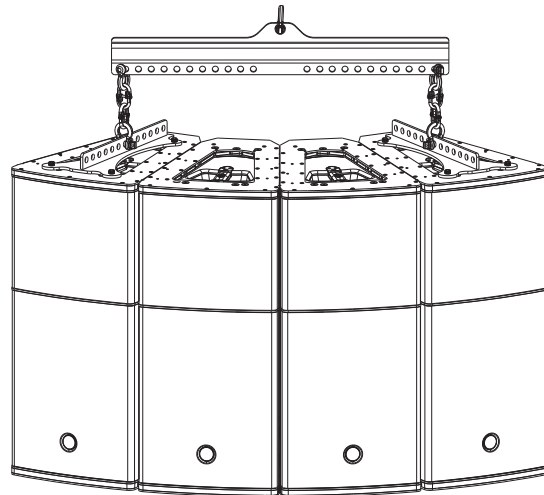
To finish, place the AX bar with the safety pins in the holes of the top part which correspond to the right angles.



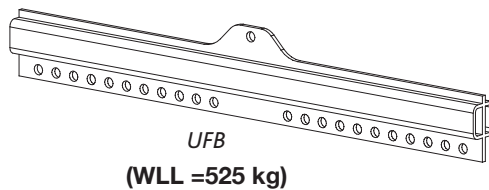
HORIZONTAL ARRAY ('-RA' versions)

For this mounting type *convert1560RA* or *convert1590RA* are required. It is very simple because only *UFB* and *AXA-CV15H* rigging accessories are required for just one lift motor. In case of using two lift motors, another *UFB* will be needed.

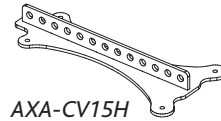
Be conscious that rigging must be performed by highly skilled workers, with an adequate knowledge of the equipment and fittings to use. Workers must also know the local safety regulations. User is responsible to ensure that sound rigging systems (including rigging accessories) meet state and local regulations in force.



Mounting type



UFB
(WLL = 525 kg)



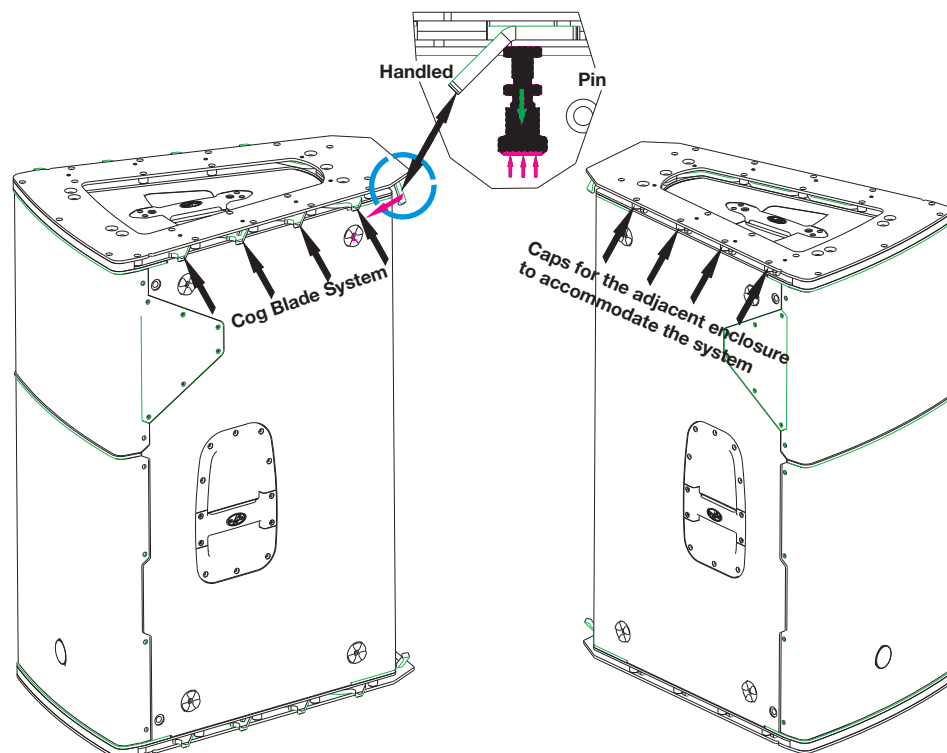
AXA-CV15H
(4 screws included)

Mounting type accessories required

Firstly, let's see how a rigging system, which is built into the enclosure, works.

At the rear you will find a safety pin which is not removable.

If we push the red button and pull it down, a cog blade system is exposed. This piece will slide out if we push a handle near the pin (see figure).



Junction between enclosures

Suppose we join several enclosures to create an horizontal array mounting type for '-RA' versions.

We will place the first two enclosures, as in **Figure 7**, one above the other on a flat surface.

The rigging system ends are aligned and prevent them from moving while acting on the locking pins.

To join the two enclosures with the rigging system we will act on the rear pin (shown in red in **Figure 9**) and also on the lever adjacent to it.

Push the red button and pull it down to free the cog blade system.

This piece will slide out if we push the lever near the pin and act simultaneously on the pin, as we said before.

Release the safety pin button and ensure that it recovers its initial position to end the process (by an internal spring as shown in **Figure 10**).

Repeat this process with the others pin (marked in blue in **Figure 9**) and the two enclosures will join together safely.

To join one more enclosure, take the group of two enclosures fixed before and follow the instructions described in the **Figure 11**.

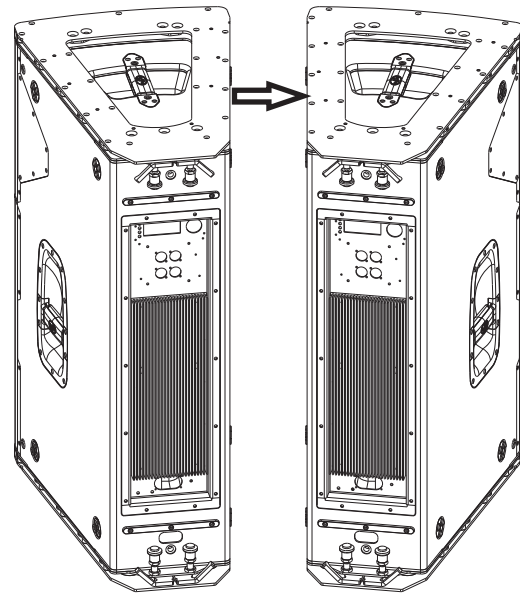


Figure 7

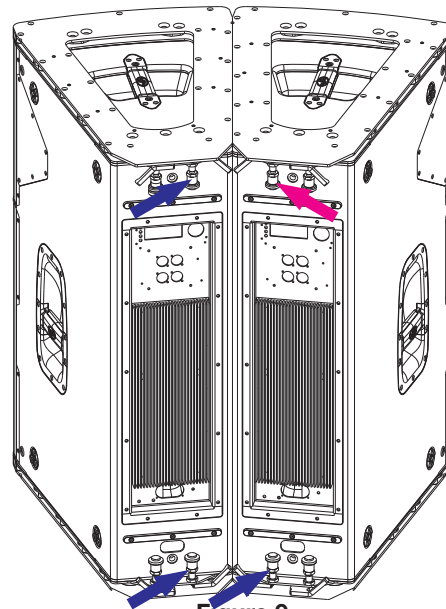


Figure 9

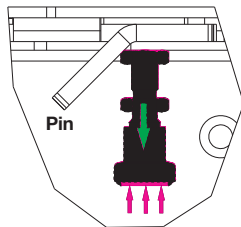


Figure 8

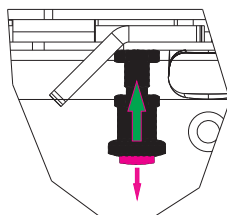
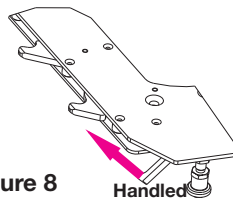


Figure 10

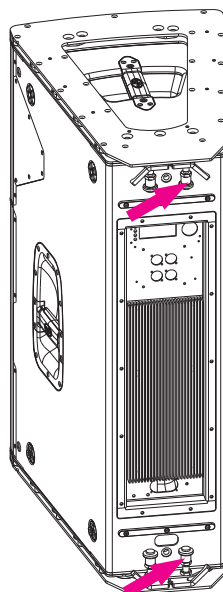
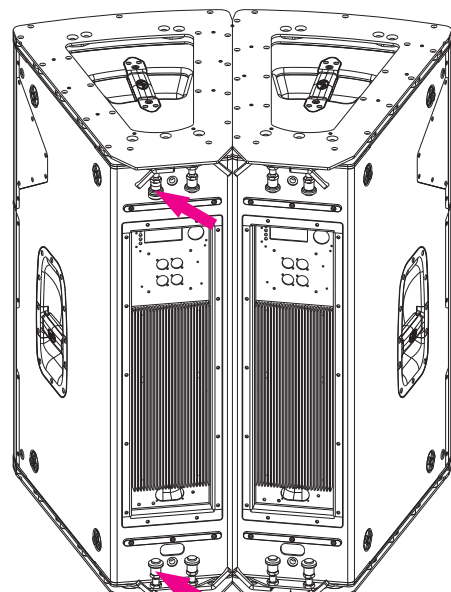


Figure 11



In the **Figure 12** we can see the mounting of three enclosures.

We should add more enclosures in the same way to the desired units.

Also, we can choose to mount systems onto **SUBs** as shown in **Figure 13**.

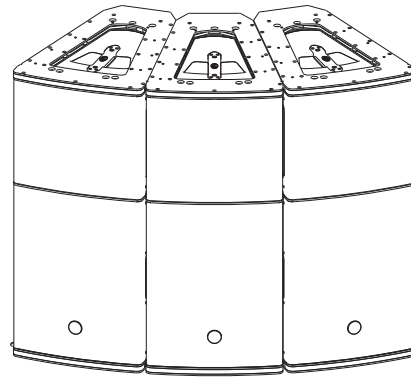


Figure 12

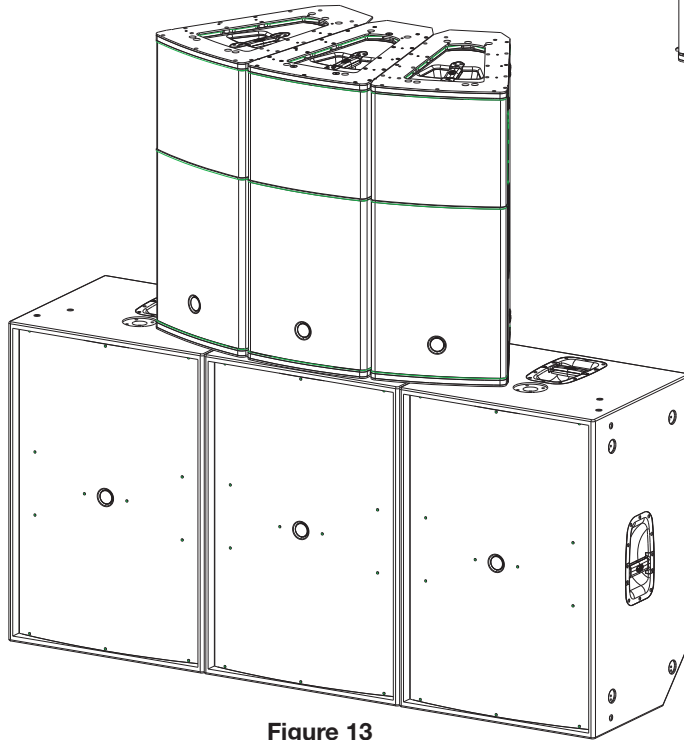
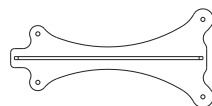


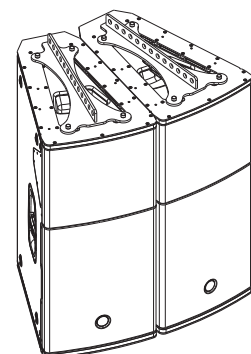
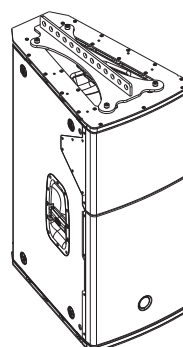
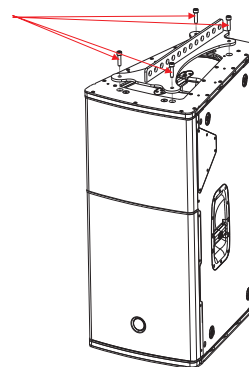
Figure 13

If we choose a rigging mounting type, after joining the enclosures place the *AXA-CV15H* and the *UFB* (one or two depending on the lift motors).

M10x70 screws (included with accessory)



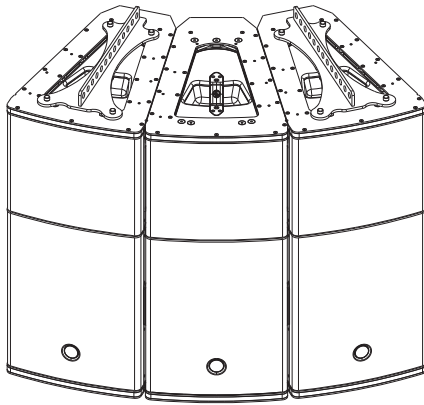
AXA-CV15H



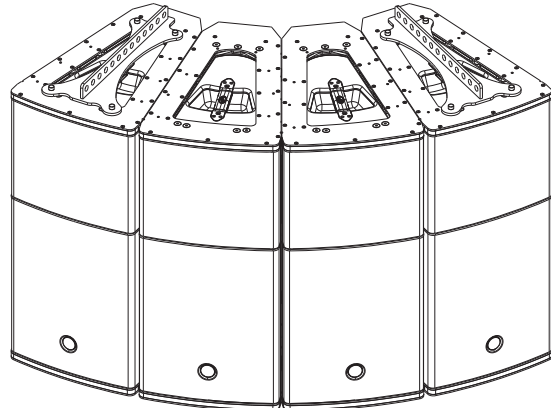
For mounting sets of one or two enclosures the use of a *UFB* is not required leaving the set as shown in the figures on the right.

For more than two enclosures we will add one or two *UFB* for the lift motors.

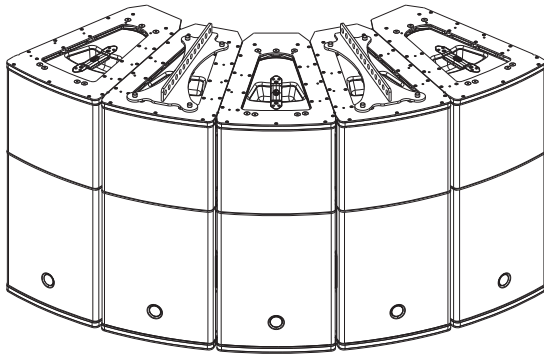
Next, for two or more enclosure sets the different mounting positions of *AXA-CV15H* are shown.



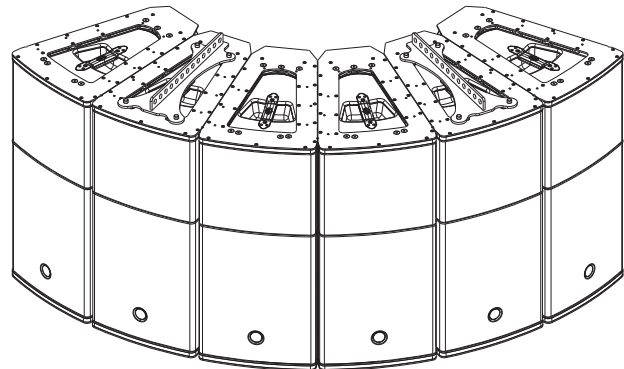
3 enclosure mounting



4 enclosure mounting

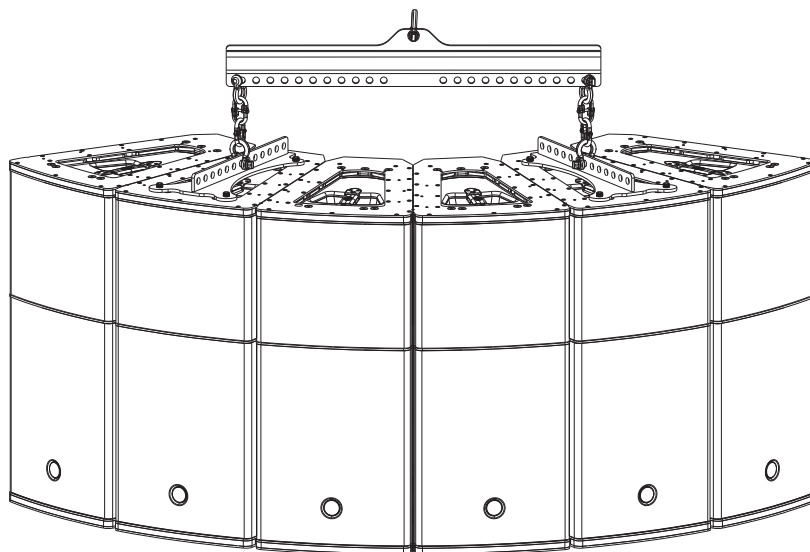


5 enclosure mounting



6 enclosure mounting

The use of the *UFB* will result as shown below.

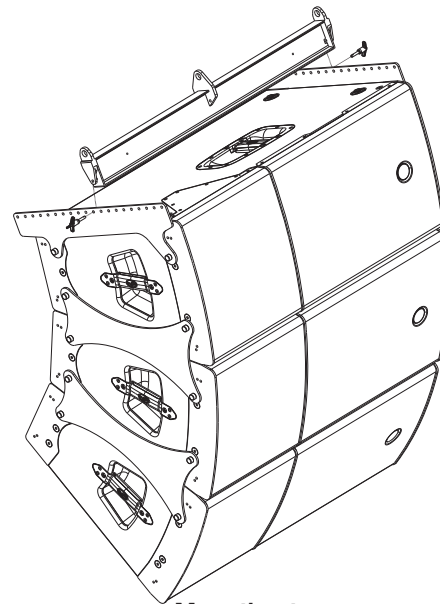


If two lift motors are used, add another *UFB*.

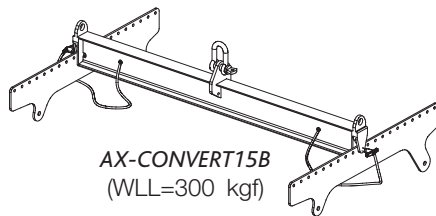
VERTICAL ARRAY ('-A' versions)

This mounting type *convert1560A* or *convert1590A* are required. Some *AXA-CV15* and one *AX-CONVERT15B* for one lift motor. In case of using two lift motors, a *PICK UP AX-CONVERT15* will be needed.

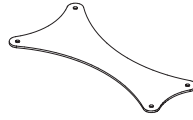
Be conscious that rigging must be performed by highly skilled workers, with an adequate knowledge of the equipment and fittings to use. Workers must also know the local safety regulations. User is responsible to ensure that sound rigging systems (including rigging accessories) meet state and local regulations in force.



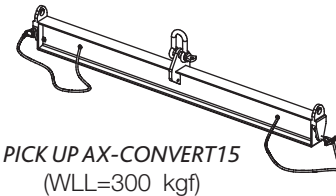
Mounting type



AX-CONVERT15B
(WLL=300 kgf)



AXA-CV15
(4 screws included)



PICK UP AX-CONVERT15
(WLL=300 kgf)

Firstly, place two enclosures like in **Figure 14**, one above the other on a flat surface.

Remove the screws indicated in **Figure 14**.

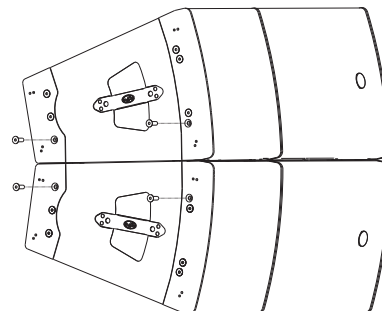


Figure 14

Following, screw the *AXA-CV15* with the included screws in the same position shown in **Figure 15**.

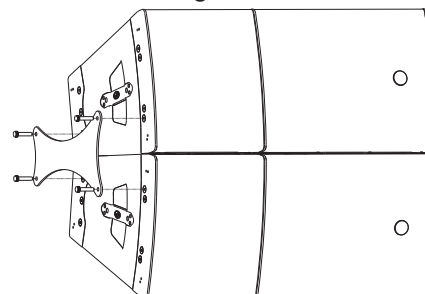


Figure 15

The final result is shown in **Figure 16**.

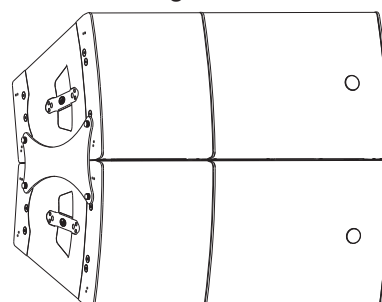


Figure 16

Repeat the process on the other side of the enclosures (**Figure 17** and **Figure 18**).

If we don't mount the third enclosure we will mount the **AX-CONVERT15B** and, in this case, we will follow the instructions shown in **Figures 19 to 22**.

Given the coverage angles, more than three enclosures won't be needed.

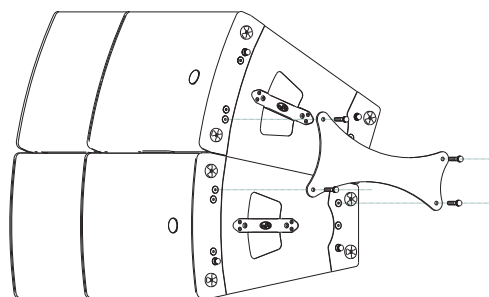


Figure 17

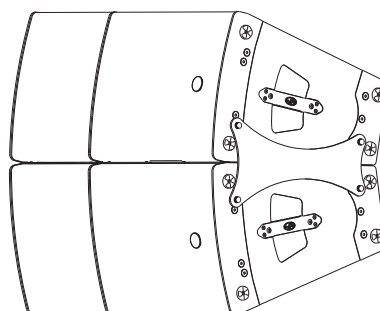


Figure 18

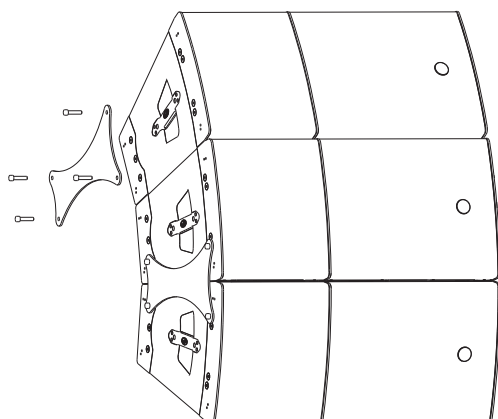


Figure 19

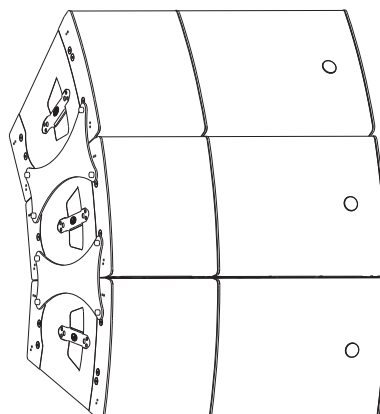


Figure 20

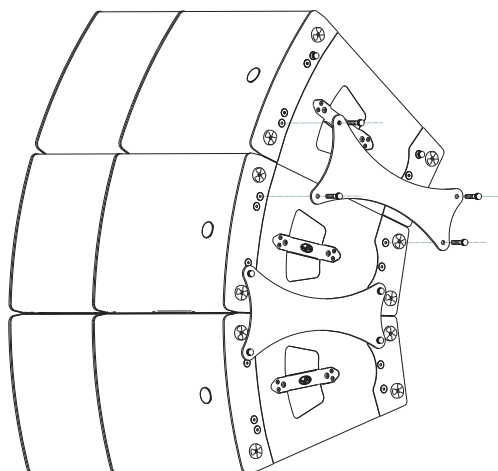


Figure 21

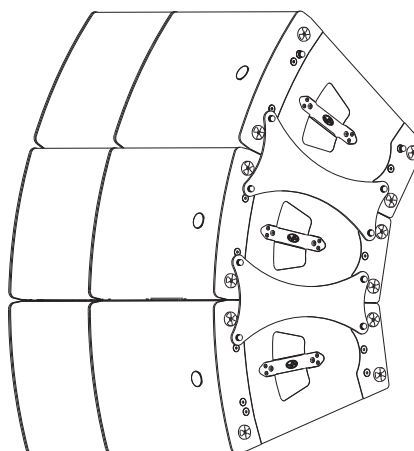


Figure 22

Now, mount the side parts of the *AX-CONVERT15B* like the next figures show.

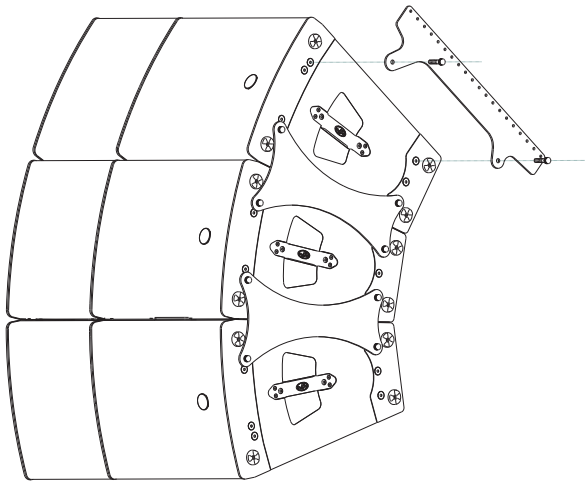


Figure 23

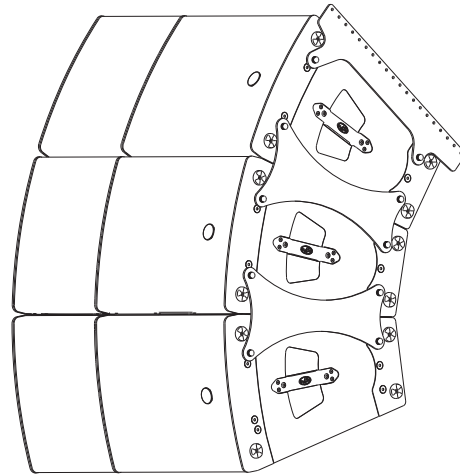


Figure 24

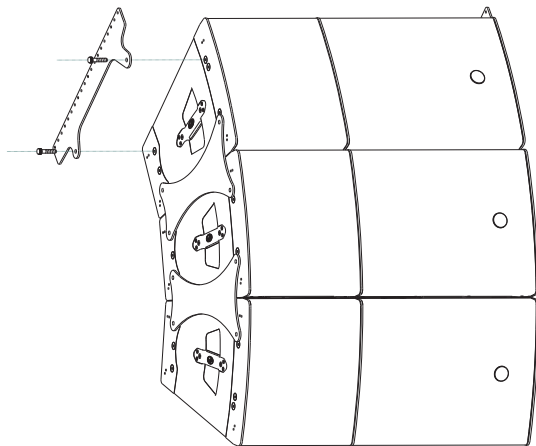


Figure 25

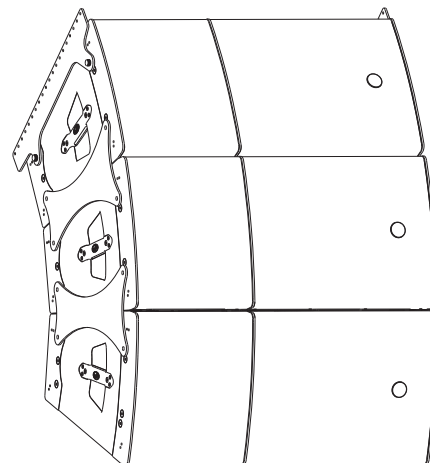


Figure 26

After that, if we are going to rig the system with one lift motor, we will mount the *AX-CONVERT15B* crowbar like the next figures show.

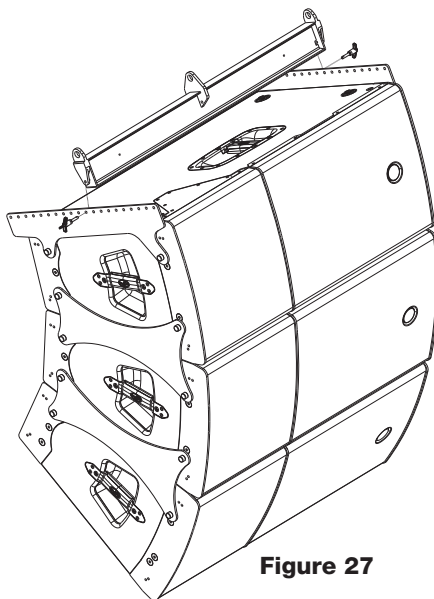


Figure 27

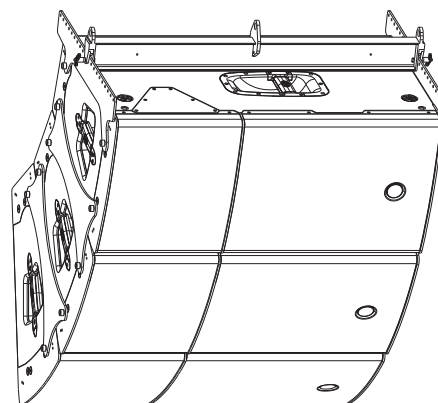


Figure 28

If we rig the system with two lift motors mount the **AX-CONVERT15B** crowbar and a **PICK UP AX-CONVERT15B** like the next figures show.

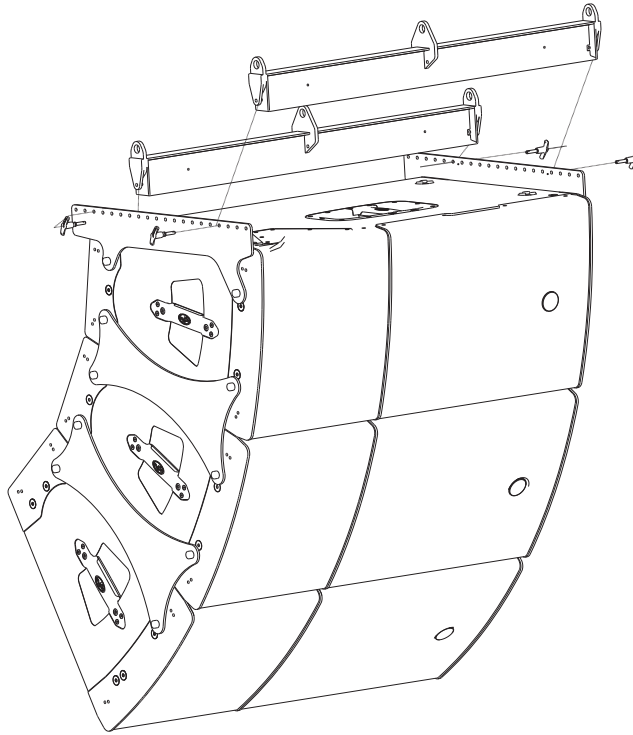


Figure 29

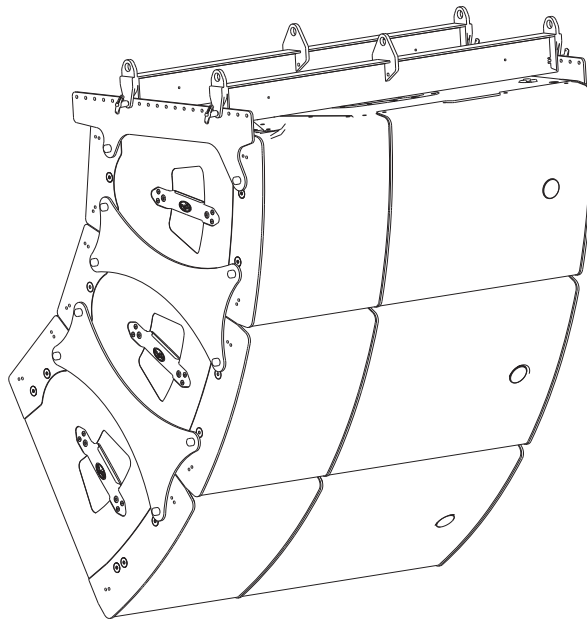
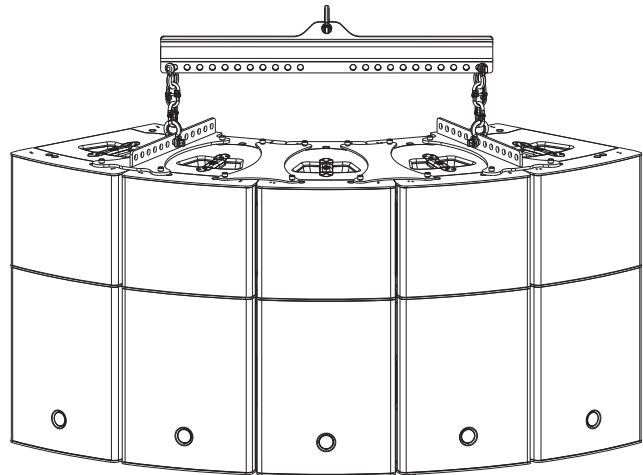


Figure 30

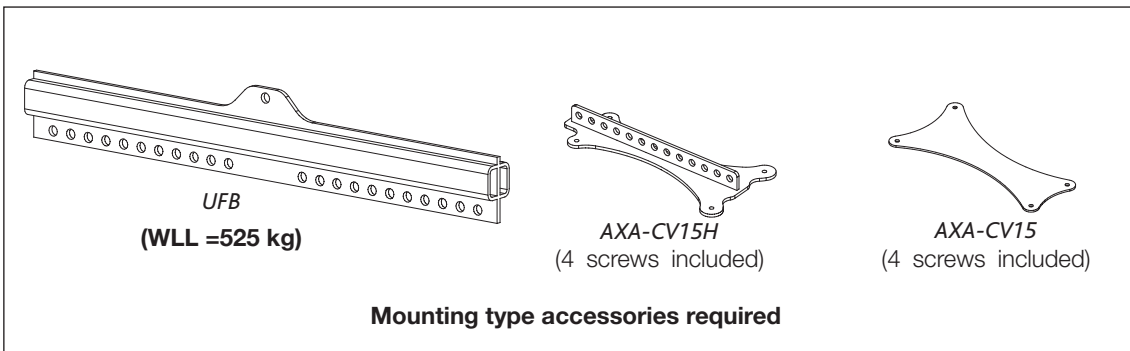
HORIZONTAL ARRAY ('-A' versions)

This setup is composed of *convert 1560A* or *convert 1590A* and is the most complex because it requires a preview planification. The following rigging accessories are required: *UFB*, *AXA-CV15* and *AXA-CV15H*. In case of using two lift motors, another *UFB* will be needed.

Be conscious that rigging must be performed by highly skilled workers, with an adequate knowledge of the equipment and fittings to use. Workers must also know the local safety regulations. User is responsible to ensure that sound rigging systems (including rigging accessories) meet state and local regulations in force.

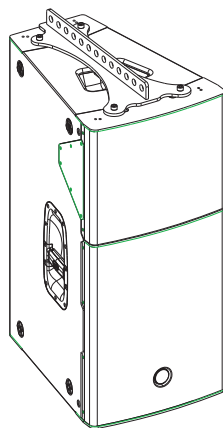


Mounting type

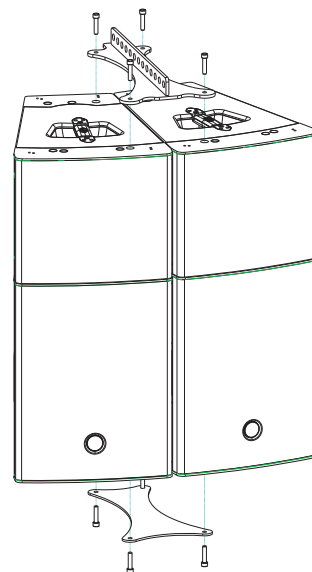


It is very important to place the pieces in the correct position as the figures show depending on the number of enclosures you need.

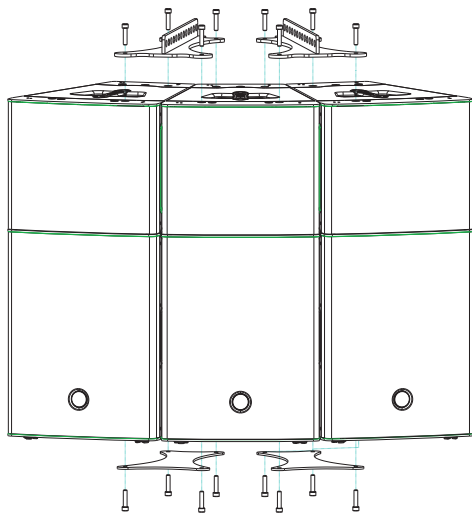
Use the screws provided with the AXA. Make sure the screws are securely tightened.
The use of security gloves and shoes are highly recommended for heavy object operations.



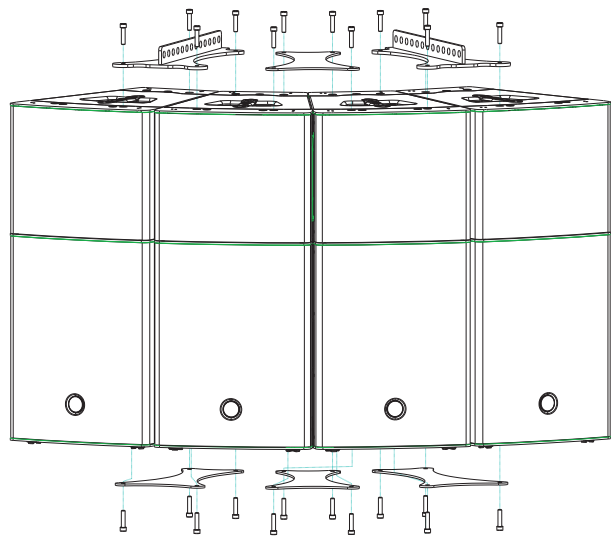
1 enclosure mounting



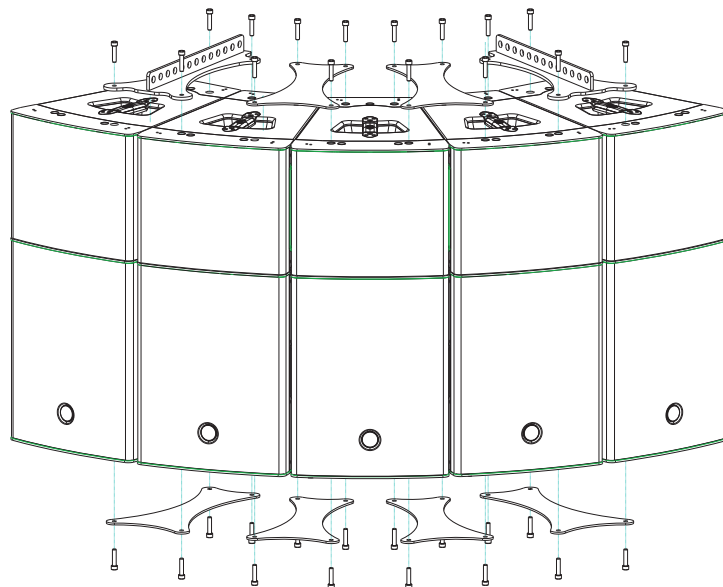
2 enclosure mounting



3 enclosure mounting



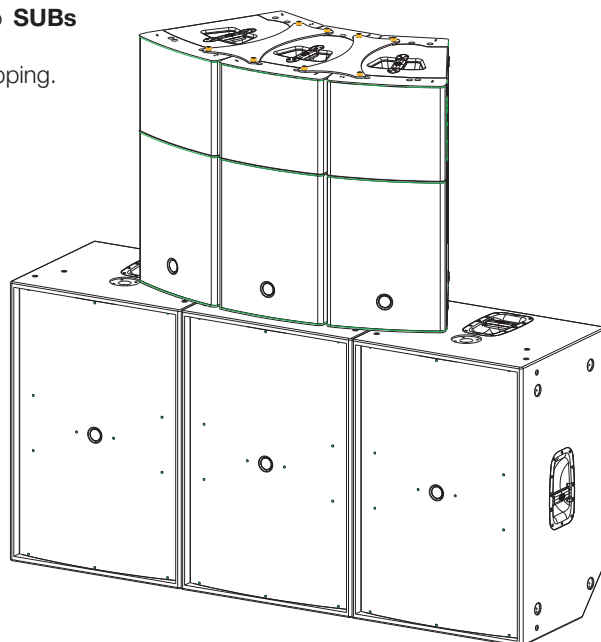
4 enclosure mounting



5 enclosure mounting
(max. recommended)

Also, we can choose to mount systems onto **SUBs** like the figure on the right shows.

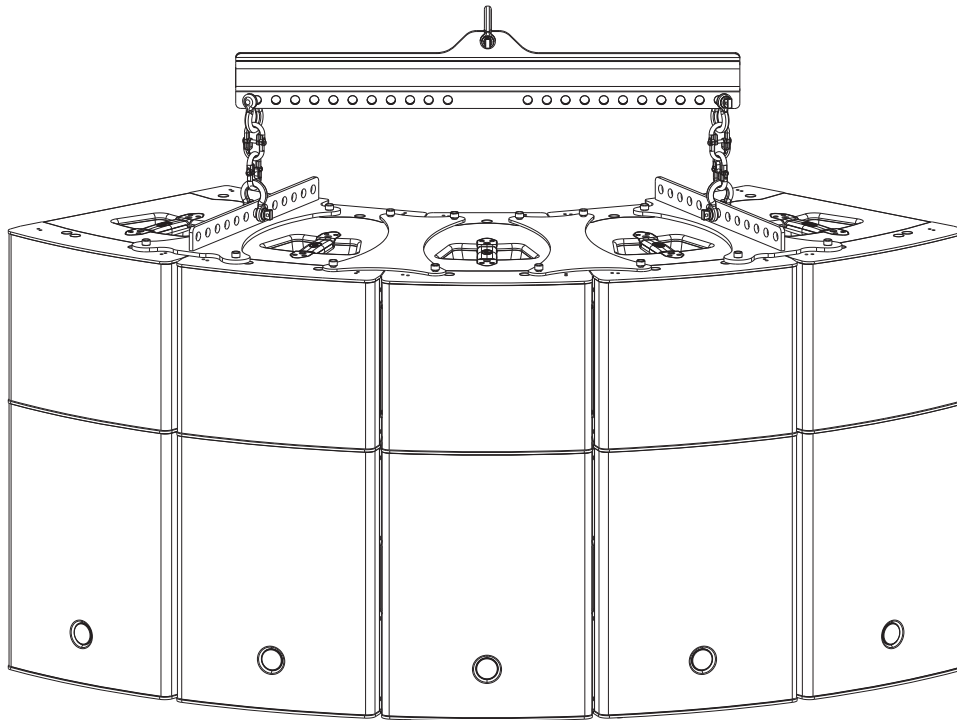
In this case secure the enclosures to prevent tipping.



If we choose the rigging mounting we will have to mount a **UFB** for one lift motor. If we use two motors, another **UFB** will be needed.

In both cases, the maximum recommended number of enclosures for this set is 5 units.

Be conscious that rigging must be performed by highly skilled workers, with an adequate knowledge of the equipment and fittings to use. Workers also must know the local safety regulations. User is responsible to ensure that sound rigging systems (including rigging accessories) meet state and local regulations in force.



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